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Are Housing Prices Too High?

Housing prices in the United States have risen dramatically in the last few decades. After adjusting for changes in quality, the price of a new home appears to have risen about 350 percent between 1970 and 1988. In the urban areas of California and the Northeast, the rate of increase recently has been particularly rapid; in the first half of 1988 alone, home prices in California may have risen by as much as 20 percent.

There is a widespread perception that housing prices have become "too high," limiting the availability of affordable housing. The notion that housing prices are too high implies that because the prices are unsustainable, housing prices might fall precipitously. Like the stock market one year ago, the housing market is now believed by some to be a "speculative bubble" about to burst.

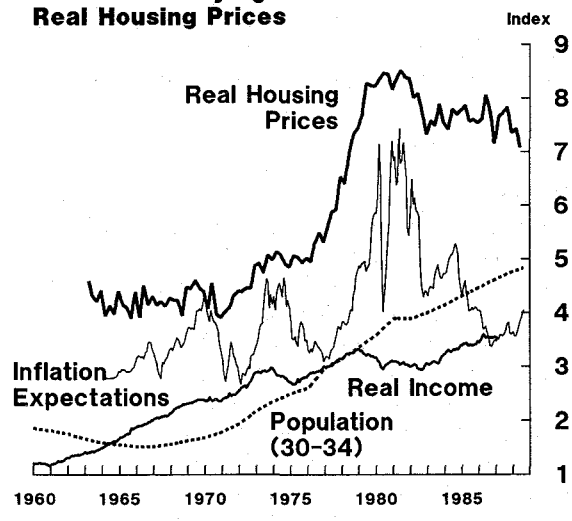
The notion that housing asset values might plummet suddenly, if true, has important implications. Housing values collateralize residential mortgage loans, which comprise about 30 percent of the assets of bank and thrift lenders. Moreover, because of tax reforms in 1986 that reduced deductibility of interest on other types of debt, housing-backed debt in the form of home equity credit is growing rapidly. A scenario of declining home prices, mortgage delinquencies, and foreclosures would be very troublesome for the U.S. economy and its financial institutions. This *Letter* examines whether the housing market is generating prices that are not sustainable.

Price data

While housing prices do appear to have risen, the precise pattern of change is not easy to extract from available data. Data from the National Association of Home Builders (NAHB) and the Federal Home Loan Bank Board (FHLBB), for example, portray sales price trends that have been rising rapidly since 1984. These data, however, do not adjust for variations in the characteristics of homes that are selling at a given point in time. Thus, a trend towards the purchase of larger homes, for example, will make housing prices in general appear to be rising, since larger homes tend to be more expensive. The U.S. Department of Commerce produces a housing price data series using data on new housing that permits adjustment for many of the qualitative features of the homes sold. This series displays a less dramatic price trend, particularly in recent years, but suffers from the problem that the behavior of the prices of new housing may not reflect the changes in the value of existing homes in established areas.

All of the series show less dramatic changes in housing prices when adjusted for changes in the general price level. Nonetheless, "real" housing prices, by any measure, have increased by 50 percent or so in the past 15 years. Since 1984, the U.S. Department of Commerce series displays no significant changes in this measure of housing prices, however, while the NAHB and FHLBB series show sharp increases in real home prices.

Trends Underlying Real Housing Prices



Housing fundamentals

The precise pattern of price increases aside, there is a strong perception that housing prices have risen to unrealistic levels, particularly in certain regions. Although this may be the case, econo-

mists generally expect markets to produce prices that are sustainable. The reason is that in most markets, participants are assumed to have good information about the "fundamental" factors that influence the benefits and costs of a particular good or service and to act on this information when they buy or sell. This suggests that the first place to look for an explanation for recent increases in housing prices, therefore, is in changes in fundamental factors that influence demand and supply.

The increases in housing prices since the mid 1970s coincide with important changes in factors that influence the housing market. First, on the demand side, demographics and household economics have changed dramatically in that time period. The number of individuals between the prime homebuying ages of 30 and 34, for example, increased from about 11 million to over 21 million between 1970 and 1988. Per capita income, adjusted for inflation, has increased by 26 percent since 1970.

Second, the economic and tax policy environment has changed in ways that likely increased the attractiveness of housing assets. In the late 1970s and early 1980s, for example, expectations of high rates of general price inflation prevailed. It has been shown that rising inflation expectations can cause the price of long-lived, tax-favored assets such as housing to jump significantly. This is true even if *expectations* of housing price inflation are the same as those for general prices.

Recent changes in mortgage policy also likely have had the effect of stimulating demand for housing assets. In the mid-1970s, for example, the income of a second worker began to be included in loan-qualification tests by lenders. This effectively gave households greater access to their wealth when making housing purchases, particularly since the labor force participation of women aged 25 to 34 has increased 60 percent since 1970. Similarly, in 1986, tax policy was changed to phase out interest deductions on consumer debt except for that secured by home mortgages. Thus, ownership of housing became more attractive because it provided an avenue for acquiring tax-favored debt.

These stimuli to housing demand would not have had any effect on housing prices if supply had been perfectly responsive to the increased prices associated with increased demand. In fact, however, the growing resistance of in-place populations to further development in areas such as Boston, Washington, D.C., and the major California cities likely has reduced the responsiveness of supply. It is not surprising, therefore, that these areas have been the ones experiencing the most rapid increases in housing prices in recent years.

Market inefficiency?

Despite these changes in powerful, fundamental factors, some economists believe that housing prices nevertheless are out of line, at least in certain local markets. Economists Case and Shiller, for example, surveyed homeowners in California, Massachusetts, and Wisconsin and apparently failed to find a satisfactory "fundamental" explanation for recent movements in housing prices.

The view that housing prices are unsustainable implies that the housing market is either unable to use the available information on market fundamentals (the market is said to be "inefficient") or is using it efficiently, but caught up in a speculative process nonetheless.

The possibility that the housing market may be inefficient has been studied recently by a number of economists. An inefficient market is one in which it is possible for a participant to make abnormally high profits by using historical information on housing prices that is available to all participants at the time of the transaction (so-called "weak form" inefficiency) or by using other data available contemporaneously (so-called "semi-strong form" inefficiency).

There are a number of reasons for thinking that the housing market might not be completely efficient. An important one is that the buyers and sellers of housing generally are involved in housing transactions infrequently and may not be expert in the fundamental economics of the housing market. Additionally, housing assets vary tremendously in their quality because of differences in location, age, maintenance, and construction. This makes it difficult to evaluate any particular housing investment.

To test for inefficiency, economists examine the behavior of the rates of return on individual housing units relative to that of the housing market as a whole. An inefficient market would be one in which deviations in this relationship can be predicted by observable information on the individual housing assets. Such a finding would

signal unexploited profit opportunities available to investors having this information. Using this technique, economist Peter Linneman investigated the efficiency of the housing market. He found that, when the high costs of conducting housing transactions are considered, the housing market offers no unexploited profit opportunities, and thus appears to be functioning efficiently.

Speculative bubbles?

The housing market may indeed be functioning efficiently, but prices still could deviate from the levels determined by fundamental factors if a speculative bubble process is underway. A speculative bubble could arise simply because of widespread irrationality—that is, participants recognize, but inexplicably ignore, fundamental factors. Economists are more comfortable, however, with the notion of "rational speculative bubbles:" episodes during which market participants correctly perceive that an asset is overpriced based on its fundamentals, but remain in the market because they receive efficient compensation for doing so. In other words, the rate of return on housing assets compensates them for the risk of the bubble "bursting."

The notion of rational speculative bubbles is not universally accepted in economics because many of its logical elements are poorly developed. For example, economists have poor explanations why such a bubble process might begin and end. Nevertheless, they have offered a number of tests which, while not definitive, might suggest whether a speculative bubble process is underway.

One simple test is to look for abrupt changes in the volatility of prices. The logic is that bursting bubbles should create rare episodes of brief price volatility. Housing price data are not particularly amenable to this test, since price index series are short and measured infrequently, possibly obscuring periods of volatility. The available housing data show no evidence of prices displaying this statistical behavior.

Another test involves examining the time trend of prices for evidence of long "runs" of excess returns. Certain patterns of such returns may suggest the existence of the rational compensation that is necessary to the formation of a bubble. Here, the data superficially are consistent with the speculative bubble hypothesis; housing prices do move up in a heavily-trended fashion, generating the appearance of persistent excess returns. Whether it in fact signals a speculative bubble, or just the influence of a slowly-evolving fundamental process, is open to debate, however.

Recent work at this Bank has explored a third test for speculative bubbles in housing. The test involves examining the relationship between movements in housing prices and the rental price of housing. If housing prices are consistently related to a fundamental market such as the rental price of similar housing, it is less likely that prices are moving independently of market fundamentals as implied by the speculative bubble hypothesis. The results of this test of "cointegration" of housing prices and rents, however, do not support the speculative bubble hypothesis.

Fundamental factors remain important

It is frustrating for many households to see housing price increases propel the dream of homeownership out of reach. Therefore, attributing the path of housing prices to a "speculative bubble" process is tempting, because such a process offers the prospect of an abrupt decline in home prices and a return to housing affordability. But the data offer lukewarm support to this notion. Moreover, housing assets do not make ideal speculative vehicles, since they are reasonably illiquid, thus making it difficult to liquidate a speculative position should investors begin to reassess the probability of the bubble bursting.

It seems more likely that increased demand caused by significant changes in demography, mortgage policy, tax policy, and the economic environment, coupled with a reduced responsiveness of housing supply in recent years, are responsible for recent increases in housing prices. This suggests that housing prices are not likely to decline without a significant reversal of these trends and policies. In addition, it suggests that policies to make housing more affordable (by subsidizing mortgages, for example) will not be very effective without addressing the constraints on supply.

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